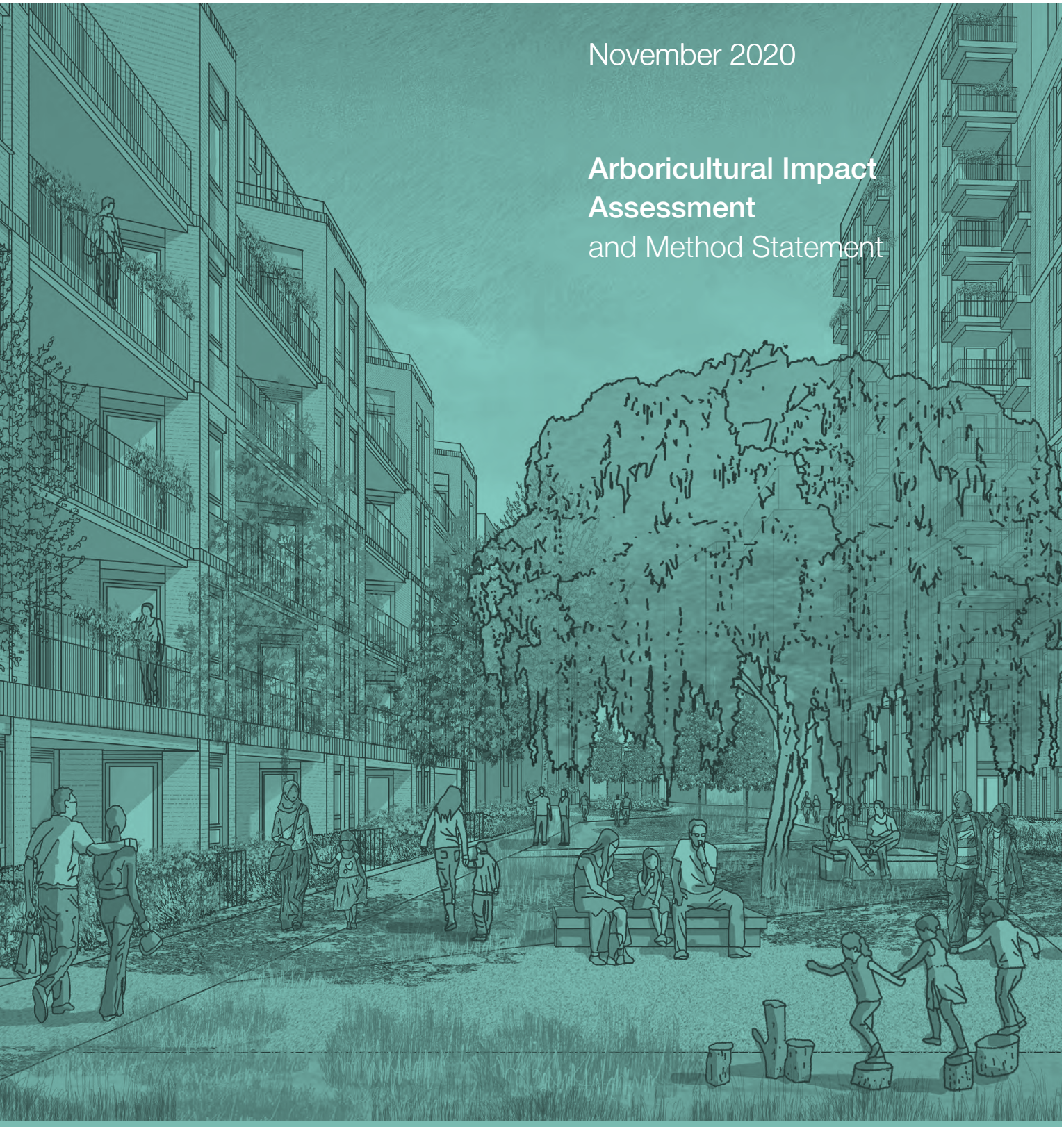
CAMBRIDGE ROAD ESTATE – PLANNING APPLICATION 20/02942/FUL

ARBORICULTURAL IMPACT ASSESSMENT & METHOD STATEMENT

NO AMENDMENT TO DOCUMENT SINCE SUBMISSION OF APPLICATION IN NOVEMBER 2020 – ORIGINAL SUBMISSION DOCUMENT

Patel Taylor

Cambridge Road Estate
Hybrid Planning Application



November 2020

Arboricultural Impact Assessment
and Method Statement

CRE
CAMBRIDGE ROAD ESTATE

COUNTRYSIDE
Places People Love

THE ROYAL BOROUGH OF
KINGSTON
UPON THAMES

The Applicant

Cambridge Road (Kingston) Ltd

c/o Countryside Properties
Aurora House
71-75 Uxbridge Road
Ealing
London W5 5SL

The project site

Cambridge Road Estate
Project hub

2 Tadlow
Washington Road
Kingston Upon Thames
Surrey
KT1 3JL

Application forms

Covering letter

Application Form and Notices

CIL Additional Information Form

Design proposals

Planning Statement

Design and Access Statement
- Vol.1 - The Masterplan
- Vol.2 - The Detailed Component

The Masterplan
- Parameter Plans
- Illustrative Plans
- Design Guidelines

Phase 1 Architecture and Landscape
- GA Plans, Sections and Elevations

Supporting information

Statement of Community Involvement

Rehousing Strategy

Financial Viability Appraisal

Draft Estate Management Strategy

Transport Assessment
Phase 1 Travel Plan
Car Parking Management Plan
Servicing and Delivery Management Plan

Construction Logistics Plan
Construction Method Statement and Construction Management Plan
Sustainable Design and Construction Statement (Including Circular Economy Statement)

Environmental Statement
- Non Technical Summary
- Vol.1 – Technical Reports
- Vol.2 – Technical Appendices
- Vol.3 - Townscape and Visual Impact Assessment

Energy Statement (Including Overheating Assessment and Whole Life Cycle Assessment)

Daylight and Sunlight
Internal Assessment of the Detailed Component
External Assessment of the Illustrative Masterplan

Extraction and Ventilation Strategy
Noise Impact Assessment

Arboricultural Report and Tree Conditions Survey
Arboricultural Impact Assessment & Method Statement
Preliminary Ecological and Bat Survey Report
Biodiversity Net Gain Assessment

Archaeology and Heritage Assessment
Ground Conditions Assessment

Utilities Report

Flood Risk Assessment
Phase 1 Drainage Statement

Fire Strategy Report

Accessibility Audit
Health Impact Assessment
Equalities Impact Assessment

CAMBRIDGE ROAD ESTATE KINGSTON UPON THAMES KT1 3JL

ARBORICULTURAL IMPACT ASSESSMENT & METHOD STATEMENT

for
Cambridge Road (RBK) LLP

ACD ENVIRONMENTAL

Ecology
Archaeology
Arboriculture
Landscape Architecture

Written By:	R. Anderson
Checked By:	T Grayshaw
Date:	15/10/2020
Revision:	A-29.10.2020
Ref:	PRI21328aia-ams

TABLE OF CONTENTS

1. Executive Summary

1.1. The site is currently a housing estate comprising of single to multi storey housing. This report is written in support of a Hybrid Outline Planning Application for a mixed use development, including demolition of existing buildings and erection of up to 2,170 residential units (Use Class C3), 290sqm of flexible office floorspace (Use Class E), 1,395sqm of flexible retail/commercial floorspace (Use Class E/Sui Generis), 1,250sqm community floorspace (Use Class F2), new publicly accessible open space and associated access, servicing, landscaping and works.

1.2. Detailed permission is sought for access, layout, scale, appearance and landscaping of Phase 1 for erection of 452 residential units (Use Class C3), 1,250sqm community floorspace (Use Class F2), 290sqm of flexible office floorspace (Use Class E), 395sqm of flexible retail/commercial floorspace (Use Class E/Sui Generis), new publicly accessible open space and associated access, servicing, parking, landscaping works including tree removal, refuse/recycling and bicycle storage, energy centre and works ("the Proposed Development").

1.3. This impact assessment is intended to evaluate the direct and indirect effects of the proposed design on the trees on site, and where necessary recommends mitigation and is in two parts. First section of this report is a detailed analysis of the Phase 1. The second is an assessment of the outline application for the rest of the site.

1.4. Given the number of trees on the site, the development proposals incorporate the majority of the better, more sustainable specimens. All of the A category trees are to be retained and protected throughout the development of the whole site.

1.5. All the trees proposed for removal as part of the development are consistent with having planted as part of the landscaping for the current site layout (or self seeding), and their landscape value is specific to that context. Although the trees have some current value, given the comprehensive redevelopment of the site, it is judged that a better overall result will be achieved by removing the trees, and planting new trees as part of the landscape proposals designed to enhance the new layout. See section 4 for details of trees to be removed as a direct result of the current design.

1.6. For nearly all retained trees, there is existing hard surfacing to be removed and turned to soft landscaping within their RPAs which must be undertaken as per BS5837 guidance. Where proposed new hard surfaces encroach into the RPA of trees highlighted for retention, sensitive surface construction will be required.

1.7. The relationship between the buildings and retained trees is sustainable and does not result in any situations which may result in unreasonable pressure to prune requests from future occupants.

1.8. The Arboricultural Method Statement (AMS) has been compiled in conjunction with the Tree Protection Plan (TPP) for the purpose of feasibility and planning, as per Figure 1 of BS5837:2012. These detail any mitigation which will be necessary to ensure the protection of retained trees throughout the development.

2. Introduction

2.1. ACD Environmental was instructed in October 2020 to prepare the following Arboricultural Impact Assessment and Method Statement by Cambridge Road (RBK) LLP. Reference should be made to the appended Tree Protection Plan (PRI21328-03).

2.2. This Method Statement is to be made available to all operatives on site during the construction process, so that they understand the scope and importance of the measures set out for tree protection. Implementation of the protection methods and other details within this report are integral to ensuring protection for the retained trees.

2.3. For details of trees to be retained, and locations and types of special protection methods, reference should be made to the latest revision of Tree Protection Plan (ref: PRI21328-03), which should be displayed prominently on site for all staff to see.

2.4. This report is based on the recommendations given in BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'.

2.5. With use of the local planning authority interactive mapping service it has been found none of the trees within the site are protected by a Tree Preservation Order (TPO), nor is the site within a conservation area.

2.6. The controlling authority is Royal Borough of Kingston upon Thames Council who can be contacted at: Planning department, High street, Kingston upon Thames, KT1 1EU

2.7. Any questions relating to the content of this report should be directed in the first instance to: ACD Environmental, 4 & 5 The Old Mill, Fry's Yard, Bridge Street, Godalming, Surrey GU7 1HP, 01483 425714, quoting the site address and report reference number.

2.8. The tree survey for the site is at Appendix 2 of the Tree Report for the site ACD reference PRI21328trD.

2.9. This assessment is based upon the supplied layout drawing by Patel Taylor; Proposed Masterplan, ref; 503-PTA-MR-RF-DR-A-12001 Rev P22

2.10. Given the urban nature of the site there are many structures and surfacing within the RPA's of trees, in some cases the RPA is completely covered with hard surfacing. The theatrical circular RPA's have been adhered too as in many circumstances it would not be possible to soundly determined the true location of the trees rooting area.

2.11. The following abbreviations have been used throughout this document:

- Root Protection Area – RPA
- Construction Exclusion Zone- CEZ
- Tree Protection Plan – TPP
- Tree Protection Fencing – TPF

3. Arboricultural Impact Assessment for Phase 1

3.1. The site is currently a housing estate comprising of single to multi storey housing. This report is written in support of a Hybrid Outline Planning Application for a mixed use development, including demolition of existing buildings and erection of up to 2,170 residential units (Use Class C3), 290sqm of flexible office floorspace (Use Class E), 1,395sqm of flexible retail/commercial floorspace (Use Class E/Sui Generis), 1,250sqm community floorspace (Use Class F2), new publicly accessible open space and associated access, servicing, landscaping and works.

3.2. Detailed permission is sought for access, layout, scale, appearance and landscaping of Phase 1 for erection of 452 residential units (Use Class C3), 1,250sqm community floorspace (Use Class F2), 290sqm of flexible office floorspace (Use Class E), 395sqm of flexible retail/commercial floorspace (Use Class E/Sui Generis), new publicly accessible open space and associated access, servicing, parking, landscaping works including tree removal, refuse/recycling and bicycle storage, energy centre and works ("the Proposed Development").

3.3. This impact assessment is intended to evaluate the direct and indirect impacts on the trees on the site in relation to the proposed development. Any potential tree impacts are identified as per BS5837:2012 section 5.4, and details are given of proposed mitigation.

3.4. Any potentially damaging activities proposed in the vicinity of retained trees are identified, such that mitigation to significantly reduce or avoid this impact can be detailed in the Arboricultural Method Statement and Tree Protection Plan as recommended in BS5837:2012 section 5.4.2.

3.5. Evaluation of impact of proposed tree losses

3.5.1. A total of ten trees need to be removed to facilitate the construction of phase 1 as part of the full application which are shown with a red dashed canopy outline on the Tree Protection Plan ACD reference PRI21328-03. A breakdown of each tree to be removed and a reason for its removal is listed in the table below:

Table 1: Trees to be removed as a direct consequence of development

Tree Number	Species	BS category	Reason for removal
T22	Silver Birch	C2	Within footprint of building E3
T26	Common Lime	B1	Proximity to proposed building E1
T27	Wild Cherry	B1	Within footprint of building E1
T71	Whitebeam	C2	Proximity to proposed building C1
T76	Sycamore	B2	Within footpath and levels change
T161	Olive	C2	Within proposed footpath
T168.1	Lawson Cypress	C2	Within footprint of building C1
T168.2	Lawson Cypress	C2	Within footprint of building C1
T168.3	Lawson Cypress	C2	Within footprint of building C1
T176	Leyland Cypress	C2	Within proposed roadway

3.5.2. It can be seen that the majority of trees proposed for removal are C category, and as such not a constraint to development.

3.5.3. Of the three B category trees proposed for removal, T26 & T27 are to be removed to allow for the construction of Block E1. Whilst the trees are B category, their retention would not be feasible without resulting in an awkward layout design, and in turn the loss of further higher value trees. It is therefore judged acceptable in holistic terms to remove the trees and provide replacement trees that will complement the new layout design.

3.5.4. T76 is a B category Sycamore located on the north of the site. The tree has some value, however it is consistent with having self-seeded, rather than intentional planting. There is space for this trees' removal to be mitigated for with the planting of two trees in this location to compliment the new pedestrian access.

3.5.5. Given the comprehensive development of the site every effort has been made to retain as many of the existing trees as possible. Following a detailed design review, it has been possible to retain 76% of the trees growing within the phase 1 area including nearly all of the trees fronting Cambridge Road.

3.5.6. In addition to the removals, the two young trees T190 and T191 are to be transplanted from their current location to a suitable planting location elsewhere in the site so they can be successfully be retained as part of the development.

3.5.7. All trees proposed for removal as part of the development are consistent with having been planted as part of the landscaping for the current site layout, and their landscape value is specific to that context. Although the trees have some current value, given the comprehensive redevelopment of the site, it is judged that a better overall result will be achieved by removing the trees, and planting new trees as part of the landscape proposals designed to enhance the new layout.

3.5.8. In support of the proposed tree removals, BS5837:2012 section 5.1.1 states: 'The constraints imposed by trees, both above and below ground should inform the site layout design, although it is recognised that the competing needs of development mean that trees are only one factor requiring consideration. Certain trees are of such importance and sensitivity as to be major constraints on development or to justify its substantial modification. However, care should be taken to avoid misplaced tree retention; attempts to retain too many or unsuitable trees on a site can result in excessive pressure on the trees during demolition or construction work, or post-completion demands for their removal.'

3.5.9. It is therefore deemed acceptable to remove the listed trees and, as part of the detailed landscape design for the scheme, include suitable and sustainable replacements as and where appropriate.

3.5.10. Replacement trees will be proposed through landscape design and will more than mitigate for their removal by providing robust long term tree cover in keeping with the proposals.

3.6. Trees to be pruned

No pruning works are required to implement the development of phase 1, and tree surgery works are not anticipated (excluding tree removals). Should any become necessary it should comply with BS3998:2010 Tree Work or more recently accepted arboricultural good practice, and be approved by the LPA and project arboriculturist prior to any commencement.

3.7. Protection for retained trees

3.7.1. All the trees within this site are growing within an urban area with significant amounts of existing hard surfacing, built structures and services within their RPA's. It is therefore important that a sensitive and practical approach is taken with regards to tree protection. Where trees require change to surfaces within their RPA, this will be conducted in a sensitive manner according to the method statement below, in accordance with BS5837:2012.

3.7.2. Tree protection fencing will be used to protect areas of existing soft ground within the RPA's of retained trees. Once the demolition in that area has been conducted the fence will be reinstalled as per the protection plan to protect the area of newly exposed ground.

3.7.3. Sensitive demolition is required in the areas shown on the tree protection plan, where existing surfaces and structures will be removed and returned to soft landscaping. For the areas indicated on the TPP these works will be conducted as per the method statement below.

3.7.4. BS5837:2012 section 6.2.1. states: 'All trees that are being retained on site should be protected by barriers and/or ground protection (see 5.5) before any materials or machinery are brought onto the site, and before any demolition, development or stripping of soil commences. Where all activity can be excluded from the RPA, vertical barriers should be erected to create a construction exclusion zone. A specification for protective fencing is given on the Tree Protection Plan. This consists of interlocking weld-mesh panels (e.g. heras) well braced by attachment to scaffold pole uprights driven firmly into the ground. Should any alternative method of barrier construction be proposed the design should be approved by the local planning authority.

3.7.5. In some circumstances tree protection fencing based on a scaffold framework may not be possible due to hard surfacing. If this is the case a secondary type of protection fencing is possible where it is supported on boots and braced. See method statement for details.

3.8. New Hard Surfaces within RPAs

3.8.1. New hard surfacing is proposed within the RPA's of ten retained trees. To avoid root damage, a no-dig approach must be taken, limiting the impact on the trees:

3.8.2. Retained trees must first be protected during all stages of the development including demolition, by the erection of fencing as specified on the Tree Protection Plan (TPP). Installing the surface may require the removing of secondary fencing of the tree protection fencing to its primary location in line with and associated method statement.

3.8.3. The areas where no-dig construction is shown the surface will be constructed above the existing ground levels so not to disturb the below rooting environment.

3.8.4. The Arboricultural Method Statement describes installation of a typical no-dig surface. This follows the recommendations set out in Section 7.4 of British Standard 5837:2012. The author of this report is not an engineer and therefore detailed engineering design and analysis must be carried out by a suitably qualified engineer. However, any design must be approved for use by the project arboriculturist.

3.9. Construction within RPAs

3.9.1. With the exception of RPA's of T23, T32 all buildings are to be constructed outside the RPA's of retained trees. T23 and T32 have existing buildings shown within their RPA's and the proposed buildings are to be built within the footprint of existing. It is likely that the existing buildings would have likely restricted root growth, therefore the proposed will not have a negative effect on the trees.

3.10. Services

It is fundamental to tree protection that infrastructure design is sensitively approached, as trenching close to trees may damage roots and affect tree health and stability. Details of services have not been provided at the time of writing. The Tree Protection Plan, showing the constraints posed by retained trees will be passed to the infrastructure engineers to inform their design, ensuring that all services avoid areas of potential conflict. As per BS5837:2012 Figure 1, once further details become available as part of the detailed/technical design for the site, the TPP and AMS will be revised to incorporate these details for services for inclusion in the Tender documentation.

4. Arboricultural Impact Assessment for outline application

4.1.1. Details of the proposed development within the outline area of the hybrid application are indicative and subject to final design. Tree Protection Plan has been produced which demonstrates that protection of retained trees is possible in relation to the outline proposals. Once a detailed layout has been produced as part of a reserved matters or detailed application, further detailed arboricultural impact assessment, tree protection and method statement may be required. Therefore, the below assessment is potentially subject to change when a detailed application is submitted.

4.2. Evaluation of impact of proposed tree losses

4.2.1. All trees proposed to be removed are shown with a dashed canopy outline on the Tree Protection Plan ACD reference PRI21328-03

4.2.2. A total of 61 trees are currently proposed to be removed within the outline application. Of these 37 have been categorised as C, 3 as category U and 21 category B. The majority of these trees need to be removed to allow for the construction of proposed buildings.

4.2.3. As per the detailed part of the application, all trees proposed for removal as part of the development are consistent with having been planted as part of the landscaping for the current site layout, and their landscape value is specific to that context. Although the trees have some current value, given the comprehensive redevelopment of the site, it is judged that a better overall result will be achieved by removing the trees, and planting new trees as part of the landscape proposals designed to enhance the new layout.

4.2.4. Replacement trees will be proposed through landscape design and will more than mitigate for their removal by providing robust long term tree cover in keeping with the proposals.

4.3. Protection for retained tree

Tree protection fencing has been shown on the appended tree protection plan indicated the default location for where the fencing is needed to protect areas of existing and proposed soft ground. This is subject to change as a detailed layout is produced.

4.4. Demolition and construction within RPA’s of retained trees.

4.4.1. Given the extensive urban nature of the site there will be multiple areas of existing surfacing and structures to be removed from the RPA’s of retained trees and turned to soft landscaping.

4.4.2. No buildings are proposed within the RPA’s of retained trees.

4.4.3. As with the detailed application, there are several areas where there will be new surfacing within the RPA's of retained trees, it is proposed these will be constructed in a sensitive manner, above the existing soil level.

5. Arboricultural Method Statement

TO BE READ IN CONJUNCTION WITH THE APPENDED TREE PROTECTION PLAN REFERENCE: PRI21328-03

5.1. Phasing of operations for tree protection

5.1.1. Implementation of tree protection measures on the site must be carried out in the following order

1) Tree removals
2) Accurate erection of tree protection fence
3) Site accessible to construction/demolition traffic
4) Demolition/site clearance
5) Installation of no-dig surface
6) Construction
7) Removal of tree protection fencing
8) Remedial tree surgery (if required)

5.1.2. The above phasing must not be changed without approval from the project arboriculturist and agreement with the Council.

5.2. Restrictions within tree protection areas

5.2.1. Inside the exclusion area of the fencing, the following shall apply:

- No mechanical excavation whatsoever
- No excavation by any other means without arboricultural site supervision
- No hand digging without a written method statement having first been approved by the project arboriculturist.
- No lowering of levels for any purpose (except removal of grass sward using hand tools)
- No storage of plant or materials
- No storage or handling of any chemical including cement washings
- No vehicular access
- No fire lighting

5.2.2. In addition to the above, further precautions are necessary adjacent to trees:

- No substances injurious to tree health, including fuels, oil, bitumen, cement (including cement washings), builders sand, concrete mixing and other chemicals shall be stored or used within or directly adjacent to the protection area of retained trees
- No fire shall be lit such that flames come within 5m of tree foliage.

5.3. Avoiding damage to stems and branches

5.3.1. Care shall be taken when planning site operations in proximity of retained trees to ensure that wide or tall loads, or plant with booms, jibs and counterweights, can

operate without coming into contact with retained trees. Such contact can result in serious injury to them and might make their safe retention impossible.

5.3.2. Consequently, any transit or traverse of plant in proximity of trees shall be conducted under the supervision of a banksman, to ensure that adequate clearance from trees is at all times maintained. In some circumstances, it may be impossible to achieve this without pruning works known as 'access facilitation pruning'.

5.3.3. Access facilitation pruning shall be kept to the barest minimum necessary to facilitate development and shall be carried out in strict accordance with the guidance below (Tree Surgery). Under no circumstances shall construction personnel undertake any tree pruning operations.

5.4. Tree protection fencing

5.4.1. The Tree Protection Plan (see the latest revision of: PRI21328-03) shows the alignment of Tree Protection Fencing (TPF),which is to be installed prior to any of the following taking place:

- Demolition
- Plant and material delivery
- Soil stripping
- Utility installation
- Construction works
- Landscaping

5.4.2. Stages for installation of TPF:

1) Hand clearance of any vegetation to allow clear working access.
2) Setting out of fencing points
3) Fencing erected
4) Site accessible to demolition/construction traffic

5.4.3. To ensure accuracy and avoid future costly adjustments, the Tree Protection Fence must be set out by a surveyor with all node points being marked clearly on site for the fencing contractor to work to.

5.4.4. Once erected, all TPF will be regarded as sacrosanct, and will not be removed or altered without prior recommendation by the project arboriculturist and approval of the local planning authority.

5.4.5. The typical TPF construction is suitable for areas of high intensity development, and shall comprise of interlocking weld-mesh panels, well braced to resist impacts by attachment to a scaffold framework that is set firmly into the ground. A detailed specification can be found on the TPP.

5.4.6. Should any alternative method of barrier construction be proposed, consultation with the project arboriculturist will be obtained to clarify the efficacy of the revised design prior to informing the local planning authority and obtaining their consent.

5.4.7. Once the exclusion zone has been protected by barriers and/or ground protection, construction work can commence.

5.4.8. In locations where it is not possible to mount tree protection fencing into the ground the method shown in the image below is an acceptable approach

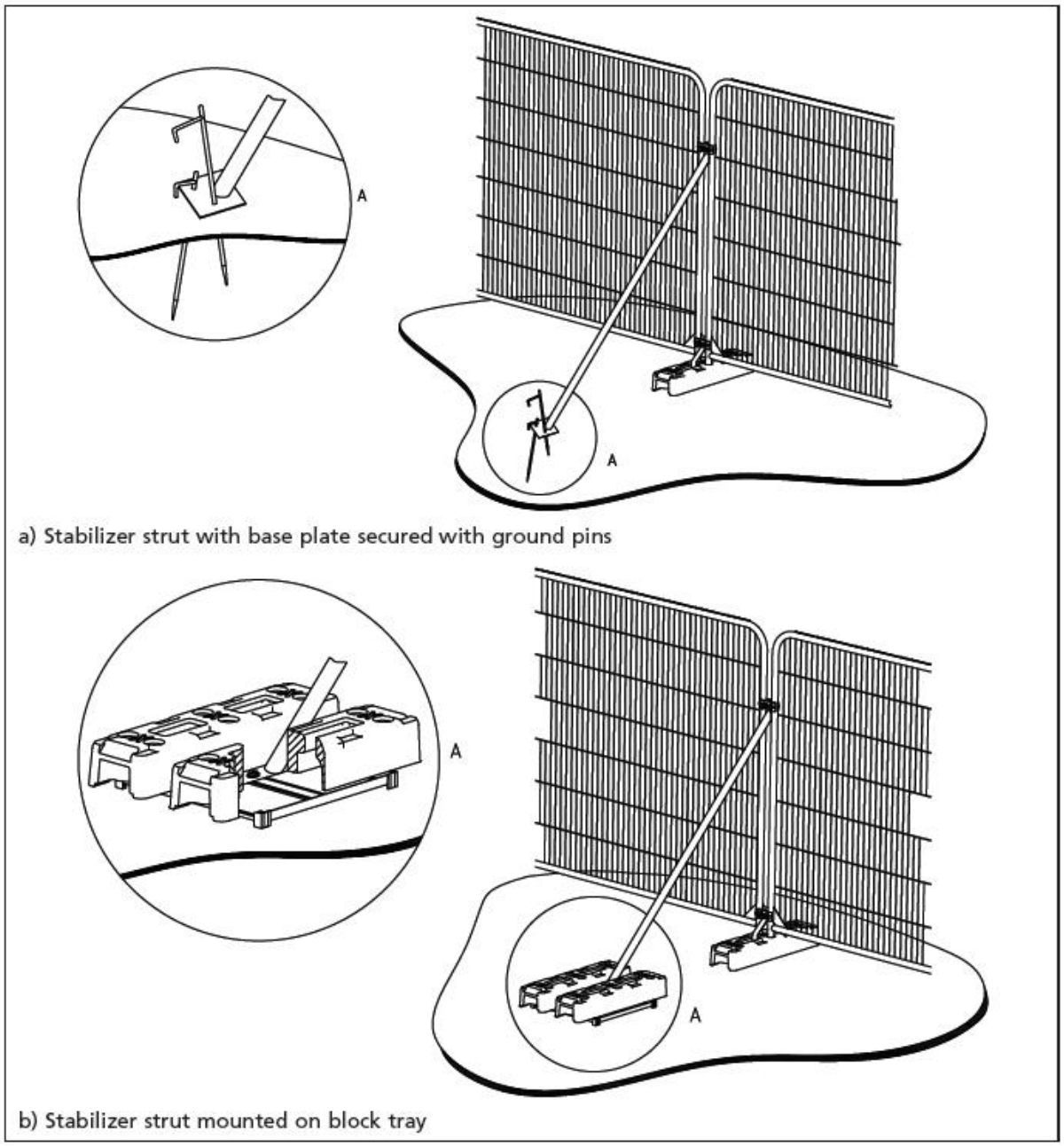


Figure 1 Alternative tree protection fence when it is not possible to mount TPF into the ground

5.4.9. All weather notices should be erected on the barriers (for example see figure below).

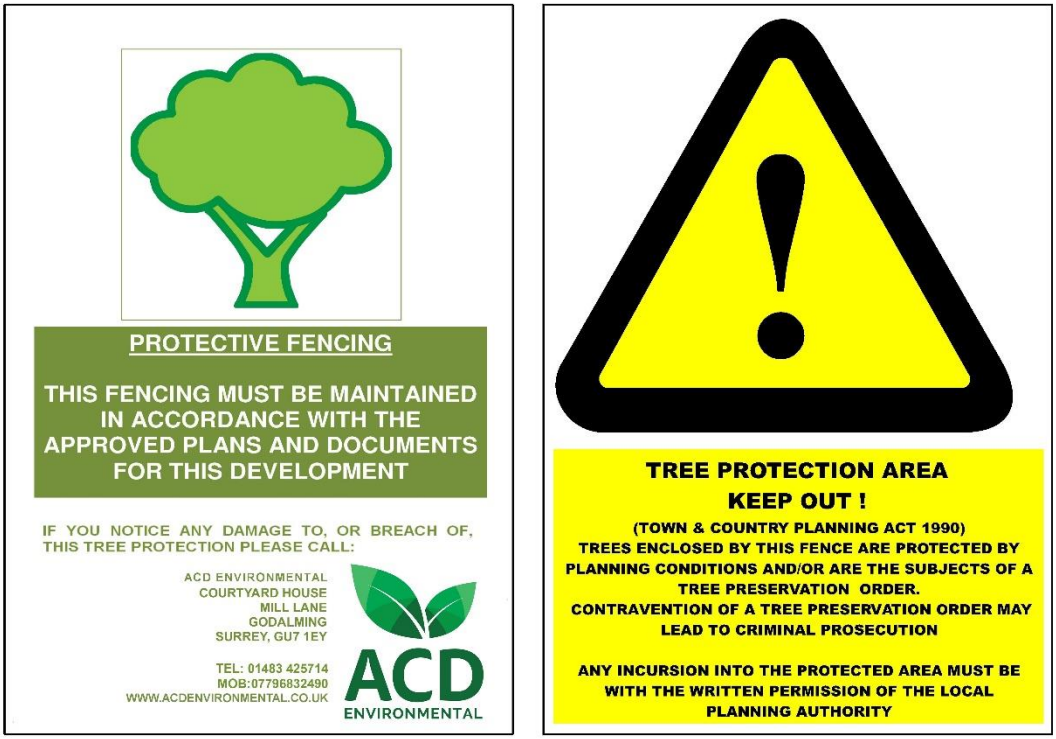


Figure 2: Tree Protection Sign (digital copies available for download at: www.acdenvironmental.co.uk)

5.5. Tree surgery and removal

5.5.1. Those trees which are to be removed are shown with a red dashed canopy outline, and a dashed emblem around the trunk on the Tree Protection Plan ACD reference PRI21328-03.

5.5.2. A list of trees to be removed as part of the detailed application can be found at section Table one at section 3.4.1

5.5.3. All trees to be removed are indicated on the Tree Protection Plan.

5.5.4. If any further tree surgery works are required, a proposed specification will be submitted to, and approved by the Local Planning Authority before any works are carried out.

5.5.5. All work will be carried out in accordance with BS 3998:2010 Recommendations for Tree Work, industry best practice and in line with any works already agreed with the Council.

5.5.6. The tree surgery contractor is responsible for carrying out any relevant health and safety risk assessment, and insurance, prior to any work being carried out.

5.5.7. The statutory protection afforded by the Wildlife and Countryside Act and Countryside and Rights of Way Act will be adhered to. If further advice is required, particularly if bats are discovered during tree work, it will be obtained from Natural England or other competent persons and recommendations adhered to.

5.5.8. The stumps of any trees removed from within the Construction Exclusion Zone or the RPAs of retained trees will be either; cut flush to ground level and left in situ or ground out using a stump grinder. They will not be winched out.

5.5.9. All operations shall be carefully carried out to avoid damage to the trees being treated or neighbouring trees. No trees to be retained shall be used for anchorage or winching purposes.

5.6. Soft landscaping within RPA

5.6.1. All landscaping and associated ground preparation within exclusion zones will be carried out sensitively to ensure root damage is mitigated as much as is practicable. At no time is any heavy plant to be used within any protected area. Removal of existing vegetation will be carried out by hand, turf may be removed using a mechanical turf stripper or by hand.

Turfing

5.6.2. Stages for turfing gardens and open spaces:

No plant machinery[1] to be used in the area for whatever reason

1) Remove TPF to allow access to area.
2) Do not reduce any high spots or excavate in any way.
3) Existing poor quality turf may be removed with a turf stripper.
4) Use good quality top-soil to level any low-lying areas and hollows, and provide a fine tilth to lay turf on. This imported soil must not result in a level increase of more than 100mm in any area.
5) Import turves by hand in wheelbarrow
6) Lay turves

Planting

5.6.3. Should the soil be compacted or have a poor structure which may hinder the development of any new planting, soil decompaction techniques may be used upon consultation with the project arboriculturist.

5.6.4. Stages for planting within tree protection areas:

No plant machinery to be used in the area for whatever reason

1) Remove TPF to allow access to area.
2) Remove existing vegetation by hand, turf may be removed using a mechanical turf stripper.
3) Do not reduce any high spots or excavate in any way.
4) Import good quality top-soil by hand (with wheelbarrow) into area.
5) Level to a depth of no more than 100mm with hand tools
6) Dig individual planting pits for each plant by hand (including hedging which must not be trench planted)
7) Any mulch should also be imported and spread by hand.

5.6.5. No works will be carried out within any protected areas if the soil moisture is of a level likely to allow compaction to occur.

[1] Including rotovators

5.7. **Demolition close to trees**

5.7.1. All TPF to be installed as per approved Tree Protection Plan prior to any plant arriving on site.

5.7.2. Sensitive demolition will occur under supervision from the project arboriculturist

5.7.3. Stages for demolition within tree protection areas:

<u>No plant machinery to be sited on any exposed rooting area</u>

1) Contact project arboriculturist to hold pre-start site meeting and 'toolbox' talk before starting work
2) Dismantle any fencing to allow work to proceed
3) Buildings to be folded in on themselves
4) Removal debris by hand or with plant machinery not located on any exposed rooting area.
5) Floor to be broken up with had held breaker and pieces removed by hand. Slab floor can be lifted carefully by machinery if appropriate
6) Underlying ground levels to be retained. No excavation to occur
7) Any exposed roots and surrounding newly exposed areas to be covered with up to 100mm of topsoil, from elsewhere on site, or imported top-soil (to BS3882:1984). Soil may be placed in area by plant but must be spread by hand.
8) Tree protection fencing to be erected in final position as shown on plan

5.7.4. No reduction in levels of the underlying soil surface will occur.

5.7.5. At no point are any heavy machinery permitted within the RPA.

5.7.6. Contamination of the soil by fuel and lubricant leaks must be avoided at all cost. If such a situation arises the project arboriculturist must be notified to assess the situation and prescribe remedial measures.

5.8. Hard surface removal within RPAs

5.8.1. No hard surface removal within RPAs will occur without arboricultural supervision.

5.8.2. Stages for hard surface removal within tree protection areas:

No plant machinery to be sited on any exposed rooting area

1) Contact project arboriculturist to hold a 'toolbox' talk before starting work
2) Dismantle fencing as required to access area
3) Plant machinery to run only on existing hard surfaces with consent from arboriculturist
4) Plant may be used to carefully peal up existing tarmac and concrete
5) Other surfaces are to be removed by hand (paving etc.)
6) Where any sub base is not likely to contain roots, and only on approval from project arboriculturist, it may also be carefully removed.
7) Underlying ground levels to be retained. No excavation to occur
8) Any exposed roots[2] and surrounding newly exposed areas to be covered with up to 100mm of topsoil, from elsewhere on site, or imported top-soil (to BS3882:1984). Soil may be placed in area by plant but must be spread by hand.
9) Tree protection fencing to be erected in final position as shown on plan

5.8.3. If the area around the retained trees is to be left following the removal of the existing hard surface, before a new hard surface is laid or soft landscaping implemented, then the line of protective fencing MUST be correctly re-established immediately the hard surface removal work has been completed.

5.8.4. If, for whatever reason there is a delay before the area is left exposed prior to awaiting a new surface, then a temporary surface must be implemented or the area fenced off.

[2]Should any roots over 25mm diameter, have grown above the final soil level and be a hindrance to any new surface installation, their removal will only be carried out under arboricultural supervision and with the approval of the LPA.

5.9. **Installation of proposed surfacing within RPA**

5.9.1. The proposed paving is partly within RPAs of these trees the following methodology will be adhered to:

5.9.2. All contractor personnel to be working within the area are to be made aware of the extent and nature of the tree protection areas as per Tree Protection Plan PRI21328-03.

5.9.3. Stages for installation of proposed paving within tree protection areas:

No plant machinery to be sited on any exposed rooting area

1) Remove secondary Tree Protection Fence to allow access to area.
2) All works to be undertaken using hand tools only, with no plant or machinery to be used within RPAs
3) Remove existing vegetation using hand tools only.
4) Level soil using landscaping rake, retaining original ground levels after vegetation removal, with no further excavation.
5) Install a non-woven Geotextile (such as Fibretex F4M) directly over soil grade level (levelled where necessary, by non-compacted washed sand) and fix in place.
6) Build up subbase as required
7) Gently compact using a manual roller, or edge of a 75mm section of e.g. scaffold board
8) Lay finishing surface
9) Fill joints with kiln dried fine sand

5.10. **Tree translocation of T189 and T190**

5.10.1. Stages for tree translocation using tree-spade:

1) Contact project arboriculturist to hold pre-start site meeting and 'toolbox' talk before starting work
2) Only the equipment capable of extracting a root ball of an appropriate size must be used. This should ideally be a tree spade or Newman tree frame. British Standard 4043:1989 'Transplanting root balled trees' states that the diameter of the prepared root ball should be at least 10x the stem diameter measured at 1m from ground level.
3) The tree/s to be relocated are to be clearly marked and surrounding vegetation cleared with hand tool
4) The receiving hole is to be prepared. This should be by extracting an identical plug from the ground so the trees root ball will locate exactly in the pit. This can reduce the requirement for guying and staking.
5) Should the project arboriculturist feel that irrigation is required, typical perforated pipe can be dug in to the ground outside of the root ball to an appropriate depth.
6) Strategic branch pruning to allow access of the moving equipment under and around the canopy is to be carried out.
7) Tree to be lifted and placed in receiving pit (excavation and relocation must be carried out in one operation, resulting in minimal exposure of any roots to the air. If storage between operations is required, the tree must be stored out of extreme weather conditions and with the root ball protected from desiccation. If a significant period is to elapse between operations then advice must be sought from the project arboriculturist)
8) If require the tree may be secured using over-ground guying methods or the more preferable underground methods, both are indicated in BS4043:1989 Appendix A (shown below)
9) On completion and after initial watering, a layer of good quality organic mulch must be applied to the area of the root ball, to a depth of 50mm.

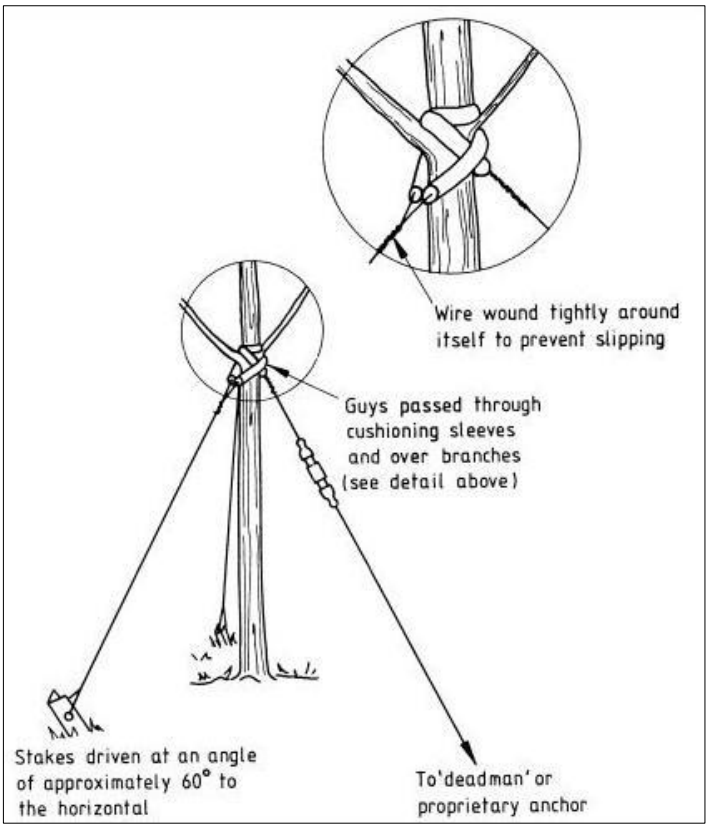


Figure 1: BS4043:1989 Figure 6

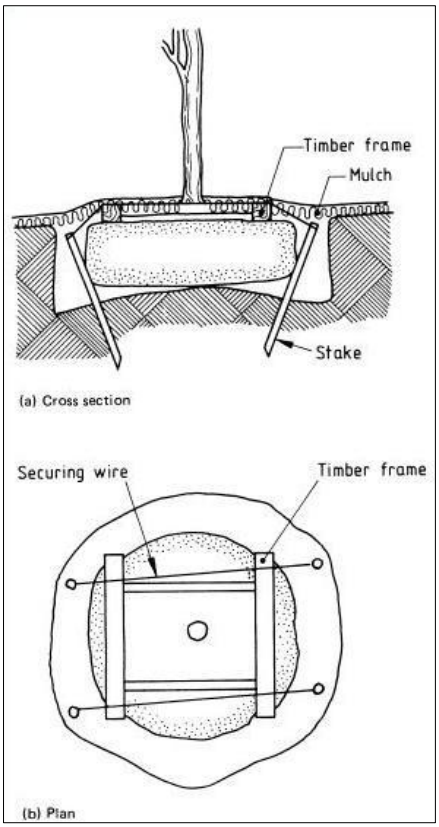


Figure 2: BS4043:1989 Figure 2

5.10.2. To ensure that the water requirement of the tree is met, an irrigation schedule may be required. This is to be agreed between the project arboriculturist and client. Details of any agreed schedule must be included in future management plans for the site.

5.10.3. Further reference can be made to BS4043:1989 'Recommendations for Transplanting Root Balled Trees'

5.11. **Soil remediation measures for compaction within RPAs**

5.11.1. Stages for soil remediation for compaction within RPA. The following works must be undertaken by a suitably qualified and experienced soil remediation contractor:

1) Soil test to be undertaken to identify soil texture, nutrient content and pH. Based on the results, appropriate remediation measures to be undertaken.
2) Compaction test to be undertaken to identify soil compaction level.
3) Appropriate soil decompaction measures using a Terravent to reduce any compaction that may have occurred. To be used in a 1m matrix over the entire area previously covered by the fill.
4) Add layer of well composted mulch to a depth of 100-200mm over the RPA area.

5.11.2. Contamination of the soil by fuel and lubricant leaks must be avoided at all cost. If such a situation arises the project arboriculturist must be notified to assess the situation and prescribe remedial measures.

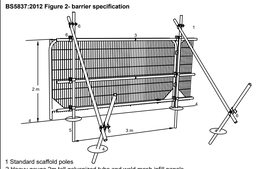
5.11.3. No plant machinery to be used in the area for whatever reason.

Robert Anderson *FdSc, Nd Arb, MArbor*
Arboriculturist

15 October 2020

DEFAULT POSITION FOR THE TREE PROTECTION BARRIERS.

BS5837:2012 Figure 2- barrier specification



1 Standard scaffold poles
2 Heavy gauge 2m tall galvanized tube and weld mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6m)
6 Standard scaffold clamps

Examples of alternative barrier designs can be found in the method statement. Should an alternative design be more viable and appropriate, it must be agreed with the project arboriculturist before its implementation.

TEMPORARY FENCING
The fencing is used to protect areas of special detail. It is to be installed with the main tree protection fence and is only to be removed when the detail is installed as per the method statement. It shall be weld-mesh panels on boots, secured to the ground with road pins (or similar).

NO-DIG CONSTRUCTION
The area of construction is to be built above the existing ground level, including retention of the existing surface.

SENSITIVE DEMOLITION
The existing feature(s) is within the RPAs of retained trees and therefore, to minimise impact on underlying roots is to be demolished as per the method statement.

TREE TO BE RETAINED

TREE TO BE REMOVED

ROOT PROTECTION AREA (RPA) FOR RETAINED TREES

A CATEGORY TREE
B CATEGORY TREE
C CATEGORY TREE
U CATEGORY TREE

EXISTING SITE FEATURES

PROPOSED SITE FEATURES

The original of this drawing was produced in colour- a monochrome copy should not be relied upon.

0 5 10 15 20 25m

Rev	Date	Details	Drawn

ACD ENVIRONMENTAL

HEAD OFFICE
Rodbourne Rail Business Centre, Grange Lane,
Malmesbury, SN16 0ES
Tel: 01666 825646

Courtyard House, Mill Lane, Godalming, GU7 1EY
Tel: 01483 425714

Suite 6, Crescent House, Yonge Close, Eastleigh, SO50 9SX
Tel: 02382 026500

email: mail@acdenv.co.uk
www.acdenvironmental.co.uk

scheme: Cambridge Road Estate, Kingston upon Thames, KT1 3JL
client: Ardent Consulting Engineers
drawing: Tree Protection Plan
date: 12.10. 2020
scale: 1:500@A0
dwg no: PRI21328-03
drawn: RA checked: TRG

Head Office
Rodbourne Rail Business Centre
Grange Lane
Malmesbury
SN16 0ES
Tel: 01666 825646

Surrey Office
The Old Mill
Fry's Yard
Bridge Street
Godalming
GU7 1HP
Tel: 01483 425714

Hampshire Office
Crescent House
Yonge Close
Eastleigh
SO50 9SX
Tel: 02382 026300

Email: mail@acdenv.co.uk
Website: www.acdenvironmental.co.uk

ECOLOGICAL SURVEYS * PROTECTED SPECIES LICENSING * MITIGATION * IMPACT ASSESSMENT * ARBORICULTURAL SITE MONITORING AND SUPERVISION * ARCHAEOLOGY LANDSCAPE & VISUAL IMPACT ASSESSMENT * LANDSCAPE AUDIT * PROJECT MANAGEMENT * EXPERT WITNESS* LANDSCAPE DESIGN & PLANNING LANDSCAPE MANAGEMENT

The Design Team

ACD Environmental
Arboricultural consultant

Architecture in Perspective
Visualisation artist

AWA Consulting
MEP engineer

Base Models
Physical modelmaker

Barton Willmore
Planning consultant
Environmental Impact Assessment
Townscape Impact Assessment

Countryside Properties
Developer

CTP Consulting
Structural & Civil engineer

David Bonnett Associates
Access and Inclusive Design consultant

Ensafe
Air Quality consultants

GIA
Daylight / Sunlight / RoL consultant

Greengage Environmental
Ecology and biodiversity consultant

Hodkinson Consulting
Sustainability / Energy consultant

H+H Fire
Fire consultant

Markides
Transport consultant

Patel Taylor
Architect / Landscape Architect

Pipers
Physical modelmaker

Realm
Visualisation and verified views

Royal Borough of Kingston Upon Thames
Project Joint Venture partner

Soundings
Community engagement consultant

SRE
Wind and microclimate consultant

Terence O'Rourke
Archaeology and heritage consultant

ULL Property
Viability consultant

WYG
Noise and vibration

Cambridge Road Estate

48 Rawstorne Street
London EC1V 7ND
T +44 (0)20 7278 2323
pt@pateltaylor.co.uk
www.pateltaylor.co.uk

Pankaj Patel MBE
Andrew Taylor

Patel Taylor Architects Ltd
Registered in England and Wales
Number 5096844